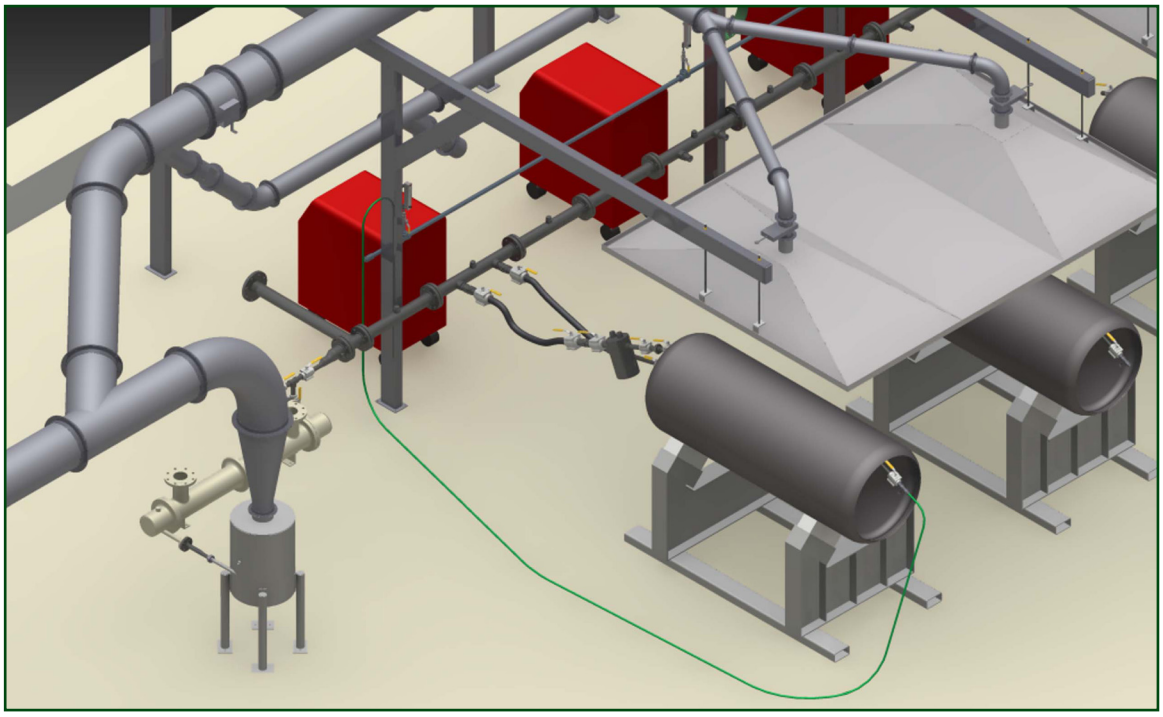
U.S. ARMY CHEMICAL MATERIALS AGENCY

Pine Bluff Ton Container Decontamination Facility



The ton container decontamination process features a carefully designed venting system to capture any residual contaminants released from the ton containers.

In September 2003, the U.S. Army Chemical Materials Agency (CMA) began work to decontaminate and recycle 4,233 empty ton containers (TCs) stored at Pine Bluff Arsenal, Ark. While empty today, the 1,600-pound steel containers once held hazardous materials and require decontamination for residual chemical agent hazard.

CMA's Non-Stockpile Chemical Materiel Project (NSCMP) is using an electrical heating method known as magnetic induction heating to decontaminate the TCs. The process generates less waste than a liquid rinse process and provides more thorough decontamination. Increased safety, reduced environmental impact and quicker processing are benefits of electrical heating.

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Magnetic induction heating

Magnetic induction uses a magnetic field to raise the temperature of the TC. Insulation is placed over the container and a copper coil is wrapped around the assembly. When the system is energized, the magnetic field causes the iron in the TC to heat up. The insulation prevents the heat from escaping, enabling operators to raise the surface temperature to the desired level.

CMA heats the TCs to 1,000°F for 60 minutes, well in excess of the standard required by the Army to achieve chemical agent decontamination. The process significantly reduces liquid waste.

For more information, contact the CMA Public Affairs Office at
(410) 436-3629
(800) 488-0648

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(continued)

How it works

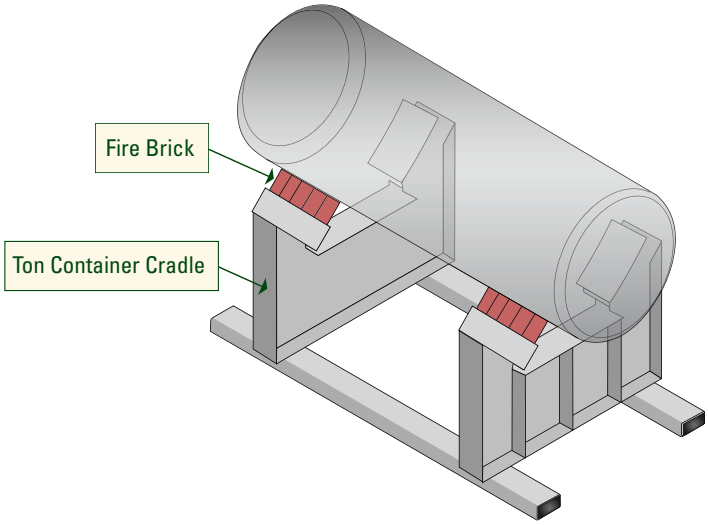
Operators bring the TC into the decontamination facility and put it in a glove box, where vent pipes and valves are installed. The TC then is removed from the glove box, and operators weld on eight thermocouples, cover it with an insulating blanket and add the induction coil. A ball valve and pipe extension connects the TC's opening to the air manifold system, allowing the system to capture any contaminants.

The induction coil generates the magnetic energy needed to heat the TC, eventually reaching 1,000°F for a minimum of 60 minutes, ensuring decontamination to what the Army once termed 5X.

Next, operators cut power to the induction coil, remove the coil and remove the TC from the air manifold system. Workers then use a forklift to move the decontaminated TC, on its cradle, to an outdoor holding area for cooling.

TCs then are loaded onto flatbed trailers for transport to a treatment, storage and disposal facility in Andrews, Texas. The TCs are unloaded and cut in half crosswise (twice), and any remaining residue is removed from the TC halves. The cleaned TCs are then sent to a metals recycler.

For more information on the Non-Stockpile Chemical Materiel Project, call Karen Drewen, (410) 436-4292. You may also visit our Web site at http://www.cma.army.mil/nscmp.aspx.



On its cradle, the ton container rests on a layer of fire brick, preventing heat transfer to the metal supports during the decontamination process.